

THE AMERICAN JOURNAL OF PHARMACY

DECEMBER, 1901.

MODERN EVIDENCES OF PHARMACEUTICAL PROGRESS AND THEIR VALUE.

BY HENRY P. HYNSON.

"Modern Drug Store Methods" was the title suggested for this paper by the gentleman who kindly invited me to read it before you. The suggestion conveyed to me not only his wishes regarding the kind of matter I should present, but it told me just why I happened to be so greatly honored; yet, this very knowledge brings me considerable embarrassment. It is because I have given so freely of my little store during three consecutive years that I was asked, and it is because I have given so freely during the same years that the "well has gone dry."

If, therefore, I borrow much from the proceedings of the American Pharmaceutical Association—a rich store-house, by the way—I trust I will be pardoned. It is better to present the old that is good than the bad that is new.

Modern and improved pharmaceutical methods have developed so gradually, and have been added to the whole in such regular order, that their practical utility and helpfulness is often overlooked. We must needs occasionally bring ourselves to a fair and sudden realization of exactly what they are before we can place upon them their individual or collective values. The question which, answered, brings most satisfaction and comfort is not "What am I?" but "What have I become?" The one is answered by a comparison with something I may be, the other by a comparison with what I was. In the latter test the past is vividly brought before us, as in

panoramic view, recording history from which our conclusions must be deduced.

Pictures and history, then, will offer us the standards by which we are to value our attainments, notwithstanding the statement of so great a writer and so great a critic as Lord Macaulay, who says, "No picture and no history can present us with the whole truth"—and, since it takes the master-hand to present enough of the truth to make a comprehensive whole, the underling must content himself with presenting the very commonplace in minute detail.

I will illustrate my apology by sketching in outline—very dark outline—the "drug-store towel." It needs but a few strokes to show it to you—possibly hanging, oftener lying around in almost any position upon the prescription counter. It looks lonely, because there are so few, or none, perhaps, to take its place. Its history, so freely written, adds nothing to its credit. The few strokes I have made are sufficient for the *towel*; but a better subject needs better work, and I present a properly dressed dispenser, with two towels attached to his clothing—one large and absorbent, the other small and fine, for finishing. These are his, have his mark on them. He owns several other sets, which he may have laundered as often as he pleases. You will notice that this picture is much more attractive because of the presence of a twenty-five-yard roll of absorbent surgical gauze in a near-by drawer, in which will also be seen a long pair of teller's or coupon shears. These shears and this gauze will enable the dispenser to make many hundreds of the cleanest, most satisfactory little towels imaginable; perfectly dry and very handy for fine work, at a cost of seventy-five cents for all.

This gauze also answers admirably for wiping off capsules, for drying soluble elastic capsules, after washing in alcohol—so often necessary. These small pieces should be retained in a convenient box or drawer, to be used most advantageously for protecting the larger towel. Whatever is of such a nature as would greatly soil the towel can be disposed of by using a piece of this once-used gauze and throwing it away. It is much better than paper, or even sawdust, for such purposes.

Two or more thicknesses of absorbent gauze answers admirably for coarse, rapid straining. This must bring to mind vivid pictures of the old-time strainer, and offers another sample of my would-be art. It may be more than of the cheaper muslin sort or yet a cork

bag. Even of expensive flannel, it looks just about the same. This picture needs much color, because the old strainer was always stained after its first use and, if you could paint odors, might mix your colors with cod-liver oil, because that gave the odor which always hung around the strainer of our fathers, no matter how hard we *tried* to keep them clean. It is by such a picture that I would make clear the value of absorbent cotton to the dispenser—snowy white, always clean, sterile, rapid, effective. This, with a number of properly assorted small glass funnels having long stems makes a fair picture of the dispensing of solutions. Gauze and cotton enable us to do as we would be done by when cleanliness is the consideration.

Need I mention that if, when filtering or straining, the operator will use a funnel with a sufficiently long stem and be sure that the outside of the funnel and the neck of the bottle are perfectly dry, the escape of air will be insured? Need I picture the reverse of this little gain? On and on one may go showing how careful observation and generous brotherhood have added improved methods and devices of great value: striking evidences of progress. Not only is this true of one department and regarding very simple things, but it is equally true of all departments; about more exalted doings. Changes have affected every phase of our calling and its practice, and the sooner we recognize these and the advantages accruing therefrom, the better will be our chances of success. If one is skeptical, he may reason the matter out on logical bases. If he doubts the advisability of locating upon a thoroughfare and near the centre of trade rather than, as was formerly desirable, in a more remote, residential district, does he not see that influences wonderful and mighty have been at work to bring this about? The world has grown strangely small, and each one of its subdivisions has grown smaller in the same degree. Does he wonder why physicians congregate in the most advantageous centre, without regard to local practice, as formerly? The telephone has brought it about in two ways, which are quite obvious; this same influence is soon to be felt in helping to concentrate the pharmaceutical business. The passing of the strictly local drug store, as a drug store, and the increasing trade in side-lines is largely due to the fact that the emergency pharmacy is no longer necessary; it is replaced by the physician's pocket, largely his hypodermic syringe case, which is often supple-

mented by the knowledge and forethought of the trained nurse. But what advantage or blessing, it may be asked, does this enlargement of the large and curtailment of the small bring? The answer is quickly made—"much and many."

I would in no way disparage the smaller stores. I would in kindness sound a warning note and lend a helping hand. It is only in the enlargement of stores and by the concentration of effort that I see release from long hours and overwork. Higher practice must be had in better stores not in more stores. If this is not true, it is possible, and will, I believe, certainly follow. There are many evidences that this is the case already. Where do we find the most desirable and competent assistants? Are they not constantly seeking and finding positions in the larger establishments? And is it not because they are better paid and have more privileges? It is there that their talents and acquirements find a better market, because needed.

Helpful progress has been made in fixtures, in the arrangement of stock, in the selection and purchase of the latter; progress in bookkeeping, in the training, selection and proper placing of assistants and general help has been made.

Containers and wrappings have been improved, and especially have methods of identification, standardization, manufacture and dispensing advanced. Some of these, if you will allow me, I will tersely illustrate.

Regarding Fixtures: In the modern drug store the old counter, with its dark cupboard-like interior has or should have disappeared; in its place counter show-cases should be found. They enable customers to see what you have and you to find what is wanted. These should, however, have sliding doors in front as well as back. The front doors add immensely to the value and convenience of these cases and need not greatly detract from their appearance. The old tiers of drawers, dusty and often infested, each drawer bearing the label of one article it did not hold but containing a dozen or twenty-nine others of varying potency and odors; instead you will find a sufficient number of inexpensive but neat tin cans to separately contain such stock as was formerly kept in drawers. Let me ask in this connection, why could not formaldehyde be judiciously used to prevent the development of vermin in such drugs as tend to deteriorate in this manner? We are trying it with

orris root. I suggest experimentation along this line. Again, you will notice that cupboards formerly used as a base for cases and shelving have disappeared; all shelving for holding cans, jars, bottles, etc., and all wall-cases begin upon a closed base, not more than 10 inches from the floor and are continuous to any height desired. Yet I am sure that a "reachable" height and a gallery is by far the most desirable. These cases will show what they contain. The greater depth of wall-cases is a modern thought, one that must be utilized to be fully appreciated. In the modern pharmacy the glass-labeled shelf-bottle has been greatly lessened in numbers or has been entirely relegated to the prescription or dispensing department, and naturally so. They are not for sale; they require extravagant attention to be kept presentable. One wonders why they have been shown so long; to have customers note how little many of these are used and how "stale" their contents must be. We become so used to our stores and stock that we fail to see the true picture they make. Look about you, on a return, as if you were a customer; notice, especially, your shelf-bottles. A good modern rule for these is to have only so many as will add to your convenience and none for show. The use of original containers kept in colored glass cases seems to offer many advantages; protection from light; saving of time required for cleaning and drying old container and in transferring; the non-mixing of the old with the new; especially is this important with essential oils, fluid extracts, etc. Besides, the original container, having generally a decided individuality, offers protection.

It may be well, in passing, to note that the glass doors of wall-cases may be effectively and attractively obscured by painting the inside of glass with liquid asphaltum, easily secured at paint stores. In connection with fixtures in detail, I am led to call attention again to a container for distilled water or whatever kind is used in dispensing. A two-gallon irrigating bottle is arranged upon a shelf high enough to place it above the line of vision of the tallest assistant; to it is attached a short piece of pure gum tubing, to which is adjusted a pinch-cock; the neck of the bottle is filled with absorbent cotton. Nothing could be more effective than this, considering both facility and accuracy.

One must not attempt to adopt modern methods unless they can be advantageously and consistently carried out. The entire separa-

tion of the prescription or dispensing department from the room in which customers are received and served, and connected with it by a waiter, has many and decided advantages, if sufficient force is available to insure the presence of four persons during business hours. With less than this, it had better not be undertaken. One person cannot possibly attend to trade and waiter; neither can one person attend to waiter and compound prescriptions. Experience leads me to offer the suggestion that the plan had better not be undertaken with less than eight available men. With such a number it works beautifully, economizing labor and time, while developing specialists in the very different fields of salesmanship and dispensing. This separation of the two departments allows me to hold before you a picture of presentable salesmen: in clothing not soiled or scant; hands and nails that are absolutely impossible with a dispenser; able to properly receive and serve patrons, with no distracting thought of what the prescription may contain or the manner in which it has been compounded. He is free to meet the oft-trying demands of the customer in the best possible manner. I am also able to show you a dispenser comfortably and appropriately clothed, quietly placed, with no distracting influences; not hurried by the impatient customer, and in a roomy, well-lighted apartment, with ample utensils and facilities. In the sales-department is stocked everything that can be passed to the patron without change; in the laboratory will be found all products used in compounding or required to be arranged for the special requisition. Orders are classed as "waits," "calls," and "send-outs." The latter are subdivided into "hurry," "time," and "unmarked," which means any time during the day. Each class is numbered, and impartial, systematic order is the rule. In the sales-department no more is done with the prescription than to properly receive, wrap and deliver it. Yet this requires care and systematic treatment. Order blanks are used for everything to come from the laboratory; for all "send-outs;" also, for all charge-sales not "send-outs." If a customer is passed articles to be found in the sales-department, no order blank, of course, is used. Checks are given for all "waits" and "calls;" "send-outs" are entered in a delivery book, where proper notation is made as to the time for delivery. Checks are numbered with a triplicating numbering machine, which puts a corresponding number upon the prescription and order blank. Checks for renewals are numbered

with a pencil. These companion sketches of the separated departments of the modern pharmacy are among our most pleasing productions, with but a single blemish. If worked out in a little more detail they show most satisfactory results from specialized and systematized effort. In marked contrast with the representation that might be made of ye ancient apothecary, or even the modern one, who attempts to serve milkshakes, base-ball bats and tobacco while making urethral bougies, or while adjusting a volumetric solution.

The one single blemish spoken of in connection with our separate-

CHECK
FOR
PRESCRIPTION

265420

Time sufficient is as necessary for the proper preparation of a prescription as are care, competency, concentration of thought and pure material. We have an ample corps of careful and competent prescriptionists, in a commodious laboratory, away from distracting influences, where, with a comprehensive supply of pure and standardized pharmaceuticals and complete modern equipment we are able to do perfect compounding, but, withal, must have time; frequently more is required than is anticipated, because unlooked-for difficulties and complications appear. Be patient; we will let you go as soon as possible.

(On reverse side)

HYNSON, WESTOOTT & CO.,
Charles & Franklin Sts.,
BALTIMORE.

department idea is the absolute impossibility of satisfying impatient or hurried waiting parties that something is being done for them; nothing short of seeing some one at work for them will be satisfactory, and this cannot be offered. A small attempt is made upon the back of check, but it is a failure. Patient education seems to be the only remedy.

The effort made in some quarters to make capital out of an exposure of prescription-manipulation must necessarily result in imperfect work, since no hesitation, consultation or consideration is possible. It must all go through without a hitch, or the impression will be bad. Such a thing as a re-trial would be out of the question when, in fact, several trials are often necessary with the conscientious dispenser, no matter how able he may be. The inference, too, is discreditable. "Because I work in the open, others

who do not, have something to hide." The argument is without force. Who would enjoy his dinner more because the slaughter-house and kitchen were in sight, though both were scrupulously clean and the operatives were as perfect in technique as is the modern surgeon. Even this model of cleanliness and care is not in the habit of exhibiting his work to the family and friends of his patient. Did it ever seem necessary to the analyst or bacteriologist that his work should be more acceptable because a layman witnessed? If a manufacturing department is, as must be, a part of our establishment, it should be in the same large room in which dispensing is done, or very closely connected; because the two work together admirably, and the one helps the other. Indeed, for a strictly retail and supply business, these two or three departments should be linked under one head.

With ability and facility to apply pharmacopœial tests, one can buy so much more advantageously. Not only can he save much but he can win confidence and respect by employing the modern methods of standardization to satisfy his conscience that what he dispenses conforms to the requirements of the Pharmacopœia; he instills into his business a personality which brings commendable pride and consequent content.

Advancement in medicine and surgery has encouraged this progress and made it necessary. Advancement in pharmaceutical education has made it possible. Positive evidence is here given of the ability of our colleges of pharmacy to meet the demands of the hour. The practitioner of pharmacy to-day *must* be educated, must be scientifically trained.

Empirical practice will not answer and the fittest will survive. That point in progress has been reached where educated persons are needed in every department of pharmaceutical practice. The apprentice is a thing of the past; modern methods leave no place for him. No one has time to watch or teach him. Of what use is he? He can run errands, but soon outgrows that. He might be a receiving clerk, but before he has learned this he thinks he should earn more than one can pay for one to receive and mark goods. He will not make a stock clerk, because lacking in the judgment necessary. He cannot become a student and attend college, because he stopped school too soon. He is out of place. Your porter must be sufficiently heavy to handle large cases, barrels, etc., and

have judgment enough to attend to the furnace, deliver and ship goods. Your janitor must be a janitress, because a woman will not be sent out on errands and, besides, women are better cleaners than men. She can also do the laundry work of the establishment; keep plenty of clean towels and the sleeping-room in order. You must have a second woman, an experienced dishwasher, to keep your laboratory in order, bottles washed and utensils cleaned. A good woman in this position is not only a comfort but a money-saver as well, since she breaks so very much less and cleans so very much better than boys. Your receiving and stock clerk must be a woman, because she will remain in the position at a moderate salary, and will become more and more valuable with each year's service.

Compare this well-ordered detail with remembrances of proprietors and assistants wasting their valuable time washing graduates and mortars or, with the boys and clerks, sweeping the store, washing windows or sweeping pavements, as of old, and you will see unmistakable evidences of progress. The pharmacist doing business to-day who does not appreciate the helpfulness of educated and college-trained assistants is most unfortunate. He has either never seen the real, or is so incompetent himself as to be unable to recognize it.

Modern drug-store methods comprehend immense variety, great length and breadth. With even so much science behind him the pharmacist of today must make method and sometimes straighten the way. If, perchance, he sells oxygen he may wish to be assured of its purity. He deems its estimation an easy task, but finds upon trial that phosphorus will not burn spontaneously in pure oxygen. Strange but true. He then somewhat ingeniously applies the electric spark; the result is generally disastrous to his glass vessel or unsatisfactory, because of the extreme violence of the reaction. If the phosphorus is introduced into a mixture of equal parts of atmospheric air and oxygen the phosphorus will continue to oxidize slowly until all oxygen is combined, when the result is easily obtained by deducting the amount of nitrogen contained in the quantity of air used. Several trials proved the constancy of the proportion of the two gases in atmospheric air; it varies but very little from the accepted, one to four. The peculiar behavior of phosphorus in pure oxygen seems to be due to the sudden formation of a coating of oxide in such condition as to effectually protect the phosphorus.

This interesting estimation of oxygen is left for the moment while so small a matter as wrapping paper is looked after and which is brought before you to illustrate how closely we sometimes cling to the old. One pictures many drawers full of cut paper with counter and drawers and floor littered with smaller or larger pieces of wrapping paper—an eyesore and a sore waste. Why! even to-day one can see, in reality, on the counters of some of our finest stores, paper “in the flat,” with huge shears lying near, with which to cut the size desired, and waste and litter again. Why not rolls and cutters? Three sizes—6, 9, 12 inches of white, and three sizes—12, 18, 36 inches of Manila, will meet every want and leave only satisfaction and comfort. But what a descent! From the estimation of gases to—wrapping paper! Yet, just such is our calling and such are its demands. In and around it one can find interesting subjects, attractive groupings, upon which the pencil can be used with most refreshing results. Science and art, manufacture, dispensing, test and assay. Competent verification, accurate standardization, comprehensive production and scientific compounding. A variety, but a most consistent variety. All actually and profitably practised.

The dream of eighteen hundred and ninety is the realization of nineteen hundred and one.

SPONGES:

WHERE THEY LIVE, HOW OBTAINED, AND THEIR USES.

BY ALBERT HART.

Sponge belongs to the animal kingdom, and the principal ones used commercially are obtained off the coasts of Florida and the West Indies; the higher grades are from the Mediterranean Sea, and are numerous in variety.

A sponge in its natural state is a different looking object from what we see in commerce, resembling somewhat the appearance of the jelly-fish, or mass of liver, the entire surface being covered with a thin, slimy skin, usually of a dark color, and perforated to correspond with the apertures of the canals, commonly called “holes of the sponge.” The sponge of commerce is, in reality, only the skeleton of a sponge. The composition of this skeleton varies in the different kinds of sponges, but in the commercial grades it con-

sists of interwoven horny fibres, among and supporting which are spiculæ of silicious matter in greater or less numbers, and having a variety of forms. The fibres consist of a network of fibrils, whose softness and elasticity determine the commercial quality of a given sponge. The horny framework is perforated externally by very minute pores and by a less number of larger openings. These are parts of an interesting double canal system, an external and an internal, or a centripetal and a centrifugal. At the smaller openings on the sponge's surface channels begin, which lead into dilated spaces. In these, in turn, channels arise, which eventually terminate in the large openings. Through these channels or canals definite currents are constantly maintained, which are essential to the existence of the sponge. The currents enter through the small apertures and emerge through the large ones.

The active part of the sponge; that is, the part concerned in nutrition and growth, is a soft, fleshy mass, partly filling the meshes and lining the canals. It consists largely of cells having different functions: some utilized in the formation of the framework, some in digestion, and others in reproduction. Lining the dilated spaces into which different canals lead are cells surmounted by whip-like processes. The motion of these processes produces and maintains the water currents, which carry the minute food-products to the digestive cells in the same cavities. Sponges multiply by the union of sexual products. Certain cells of the fleshy pulp assume the character of ova, and others that of spermatozoa. Fertilization takes place within the sponge. The fertilized eggs, which are called larvæ, pass out into the currents of the water, and, in the course of twenty-four to forty-eight hours, they settle and become attached to rocks and other hard substances, and in time develop into mature sponges. The depth of the water in which sponge grows varies from 10 to 50 feet in Florida, but considerably more in the Mediterranean sea, the finer grades being found in the deepest water, having a temperature of 50° to 57°.

The method of obtaining sponges in the Mediterranean is by means of divers with apparatus, though this was prohibited by the Turkish government many years ago, but not adhered to, owing to the lack of support by the Greek government, and to excessive fishing, thus deteriorating the sponge beds, which require about three years to properly develop. As a consequence, these goods have be-

come scarce and greatly enhanced in value. A diver usually stays below the water a half to one minute, gathering what he can in the meantime, though, with apparatus, he can remain below the surface a considerable time. His work is very hard, owing to the pressure of the water. He is trained to his work when very young, and seldom lives more than thirty years. In the Florida and West India waters the fishing is done in flat-bottom boats, called dingies. A tin or wooden pail with a glass bottom is used to help locate the sponges, by lowering it into the water and looking down through it. When located they are brought up by means of a long pole, about thirty feet long, with a sharp-curved, double hook, by which means they are detached and brought to the surface. After obtaining a boatload it is laid out to decompose, a process better observed from a distance, owing to the obnoxious odor. They are laid out in kraals on the beach, and so washed by the sea. After the cleaning process they are taken to the market and sold to the dealers, who are experts, the highest bidder becoming the purchaser. They are then sorted and packed into bales according to size and quality. Of commercial sponges there are many different varieties, namely: sheepswool, velvet, yellow, grass, glove, reef, hardhead, and wire, emanating from Florida and the West Indies, each variety having several different grades, the Mediterranean giving us honeycomb sponges, commonly called "Turkish bath," "Turkey sponges" (*i. e.*, silk surgeon sponges), leather sponges (*i. e.*, elephant ears or wash-rag sponges), there being also several different grades of each variety. Sheepswool are named Rock Islands (Exhibit No. 1), Key (Exhibit No. 2), Matacomby (Exhibit No. 3), obtained from Florida. Abaco (Exhibit No. 4), Cuba (Exhibit No. 5) and Nassau (Exhibit No. 6), from the West Indies, their names being given in order as to quality, the most valuable being Rock Islands, which are of a strong fibre and best form, being most valuable for carriage washing and heavy work. This grade also makes fine bath sponges, either bleached with permanganate of potash, muriatic acid and oxalic acid, which makes them a white color, and then washed in a bath of sal soda or lime water, thus neutralizing the acid and changing the color yellow or lemon. This method, however, greatly weakens the fibre of the sponge, thus ruining it as regards durability. A better method, though not so pleasing to the eye, is to wash the natural sponge in a weak solution of oil of vitriol (Exhibit No. 7 to

compare with Exhibit No. 1), say one part of acid to twenty of water, allowing them to remain in until the dark color is taken out of the sponge, then thoroughly washing in water. This process does not injure the sponge, and makes it look cleaner.

Key sheepswool is a good form, soft and close fibre, lacking strength, owing to the iron in the sponge, which is signified by a bright-red color at the root and running entirely through the structure of the sponge. It is extensively bleached and looks nice, but wears badly, owing to the excessive use of acids necessary to abstract the iron from the sponge.

Abaco sheepswool somewhat resembles the Rock Island, though lacking its strength.

The Cuba sheepswool resembles the Key variety, being lighter in color.

The Nassau being the coarsest grade and is irregular as regards the horny fibres, firmness and shape.

The velvet sponges (Exhibit No. 8) of which there are several varieties, *i. e.*, Abaco, Cuba and Cay from the West Indies, also a hard variety from Florida, are much used as cheap carriage sponges and for general purposes, being moderate in price. The Abaco (Exhibit No. 9) and Cuba velvet are the best, and much resemble sheepswool. A large hole at the top of this sponge spoils its utility. The Cay variety is the one largely used, being more abundant. The Florida velvet is coarse and hard, and is not generally liked, except for certain manufacturing purposes. Owing to a hole in the top of this grade of sponge many people prefer the cut sponges, *i. e.*, the large sponges cut up and trimmed, thus obtaining a nice solid sponge minus the holes. The yellow (Exhibit No. 10) sponge has also several varieties—Nassau, from the West Indies; Key and Matacomby, Florida, which are a good shape, but rather brittle, and are used chiefly among the painters, bricklayers and for household purposes. The best of these are the Matacomby and Key. There is also a species of yellow sponge called "hard head" (Exhibit No. 11), and this is what its name implies—a "hard" sponge. One variety, however, from Cuba (Exhibit No. 12) has a fine texture and is soft, though somewhat brittle, and is valuable, bleached, to take the place of a surgeon sponge.

The grass sponge (Exhibit No. 13) is of a very poor species and very low in price. It is chiefly used for manufacturing purposes by

painters, stone-masons, bricklayers, etc. The best quality and nicest shapes are bleached and sold on the market for a cheap bath sponge and are as good in appearance as the higher grades, but give no satisfaction in wear.

The reef sponges (Exhibit No. 14) are fine in texture, but lack strength, are extensively bleached for toilet purposes, and used by manufacturers and engravers.

Sponges from the Mediterranean sea are superior in quality to either the Florida or West Indies. The horny fibres being far less pronounced, they do not develop to the same thickness. They are finer in texture and more pliable, and grow in deeper water, having a surface temperature of 50° to 57° in winter, which is clearer and more free from impurities and the more difficult to obtain. The various grades are called white Turkey, *i. e.*, silk surgeon sponges; brown Turkish, *i. e.*, Zimocha, being similar to the silk sponge, only coarser and darker in color; leather sponges, *i. e.*, wash-rag or elephant's ears and honeycomb sponges; all of which have several different varieties. The best varieties are Mandruka Turkey cups (Exhibit No. 15), deriving their name from their formation, similar to a cup; Turkey solids (Exhibit No. 16) which are the same variety, only solid, as the name implies. The leather sponges (Exhibit No. 17) are thin, flat and fine in texture, used chiefly for manufacturing purposes and used considerably in Europe by veterinary surgeons. Brown Turkey, *i. e.*, Zimocha sponges (Exhibit No. 18) is similar in texture to a silk sponge, but brittle. It is chiefly used in Europe for a horse sponge and also for manufacturing purposes. Honeycomb sponges are various in quality, these being known as Mandruka (Exhibit No. 19) and found in deep water, are perfect forms, and have a close fibre and no horny fibres protruding from the surface, and are characteristic for their small root. This latter fact should be borne in mind in selling sponges. Many people object to large holes in the sponge, whereas, the root is the chief factor in determining its strength. The "catch" of this grade is diminishing yearly, thereby enhancing their value, consequently only a few dealers import them, the largest supply coming to Philadelphia.

Next in quality comes the Bengaza (Exhibit No. 20) a sponge similar to the Mandruka, though somewhat coarser, but a nice shape and strong, and is usually solid as a "Mandruka." This sponge grows in deep water. The cheaper varieties of honeycomb, *i. e.*,

Turkish bath (Exhibit No. 21) are found in shallow water and are numerous in variety, quality varying according to depth at which they are found. They are chiefly bleached, only the finest selected being used in their natural color.

The question of propagating sponges has been discussed both as regards Florida and Mediterranean sponges, and the idea is believed to be feasible. The method is as follows: Sponges cut into small pieces will live and grow if properly attached in suitable water (clear and free from impurities). They can be cut on a moistened board with a knife or a fine saw. Care must be taken not to express the soft matter. The preferred size of the cuttings is about 1 inch broad and similar in height. The outer skin should be retained as far as practicable. In cutting, the lines of the circulating canals should probably be considered, although pieces cut without any reference to the direction of the canals have lived and grown. Exposure is not injurious, unless exposed too long or in very warm weather. The clippings must then be made fast, care must be taken to use material that is not injurious to the sponge and will not distort its growth. They must be fastened on the bottom in an upright position that can be maintained, and not smothered by mud, sand or sediment. The use of bamboo pegs seems to have given much satisfaction and good results attained in as short a time as a year.

Owing to the great advance in the cost of sponges during the last few years, due to the scarcity and the results of overfishing and increased demand, of which the European market has been a factor, the packers in Florida have resorted to loading sponges to keep down the price, so as to appear to continue asking the former prices, whereas in reality, the cost is 20 to 35 per cent. higher. There are several methods of accomplishing this, such as injecting into the sponge sand and marble-dust; also by washing the sponges in a salt solution and by injecting glucose and heavy syrups. In fact, so heavy do they endeavor to load them that it is a wonder that the Government did not contract for loaded sponges for their cannon in its late war with Spain. Dealers now offering pure sponges free from sand and foreign matter are practically ridiculed by retailers, when quoting \$1 and \$1.50 per pound higher than their competitors offering loaded sponges, though they are offering the better and cheaper article and not likely to scratch or spoil a highly

polished article. To compare the difference between a pure and loaded sponge, take a 2-ounce sponge of each grade, wetting them both up, and it will be found that the pure article will measure about nineteen inches in circumference, or thereabouts. The loaded article in comparison will only measure about sixteen inches in circumference and less. Of course, this will largely depend upon the amount of foreign matter contained therein, the average herein given being taken from a bale of each kind and measured. Take a sponge of equal weight, say 2 ounces, costing \$4 a pound and pure, and a loaded sponge at \$3 per pound, and it will be seen that by washing them out you are getting a larger sponge in the 2-ounce pure than in the 2-ounce loaded, and therefore the cost is practically equal, despite the fact of there being \$1 difference per pound in the price. A bale of pure sponges averaging eight to the pound at \$4 a pound will be as large if not larger than a loaded bale about six to the pound, at \$3 per pound. The cost of both of these per sponge is 50 cents. The purchasing of loaded sponges should, therefore, be avoided, it being illustrated that as good value, if not better, can be obtained by paying the higher price.

Many dealers are now offering sheepswool by the piece, a stated number of sponges being packed in a bale, and this method is commanded, saving the retailer the trouble of figuring the individual cost of each sponge, and sometimes unconsciously losing their profits by not taking into consideration the difference of gross weight at which the sponges are usually purchased and the net weight, and even a possible loss from the sponges drying out. In this connection we would say that sponges in bales absorb the humidity in the summer-time, and are usually more or less damp, whereas, in the winter-time, they lose in weight, owing to the dryness of the air.

A METRIC MEDICINE GLASS.

BY M. I. WILBERT.

Apothecary at the German Hospital, Philadelphia.

One of the most potent reasons why the metric system of weights and measures has not made more rapid progress in general favor or, what to us pharmacists is of more importance, in the practice of medicine and pharmacy, is the fact that the general public, and even doctors and some druggists, have no well-developed ideas of metric

quantities until they have converted them into the more familiar system of ounces and pounds. For example, 200 c.c. represents nothing tangible to the average mind until the person has converted this term into the approximate equivalent of six and three-quarter ounces. In other words, we have not as yet accustomed ourselves to think in decimal quantities, but continue to think of and to figure out quantities in ounces and fractions and subsequently attempt to transpose them into their metric equivalents. This process is not only tedious; it is also uncertain and, to a certain extent, dangerous, as a person who must necessarily transpose from one system to another cannot have an exact knowledge of the approximate values of weights and measures of the system that he is transposing into.

This is a point that should not be lost sight of, and especially in the metric system, where the simple displacement of a figure means the mistake of ten or a multiple of ten.

But even in cases where an actual and sincere attempt has been made to use the metric system in the prescribing and dispensing of medicines, we have an impediment in the accepted approximate-values of capacities assigned to the various household utensils that are commonly used to measure out doses of liquid medicines. Thus, for instance, custom has sanctioned the practice of accepting the capacity of a teaspoon to be a fluid drachm, and a tablespoon to be equal in capacity to four teaspoons, or to hold approximately half a fluid ounce. Now, any one who is sufficiently interested can readily prove to himself that not only do the various spoons differ considerably in their actual capacity, but that the average capacity of an ordinary teaspoon is much greater than that usually assigned to it. You will also find that but few tablespoons will hold more than the equivalent of three teaspoons.

It is true that in many cases a glass medicine glass or tumbler has displaced the more domestic method of measuring with the actual spoon, and that by this means we are able to give more evenly divided doses; still, even our glass medicine tumblers do not always hold the exact quantities that the graduations would indicate, and in others where the graduations are correct the tumblers are of such a shape that absolutely accurate results would be difficult to obtain, even by an expert.

But what we wish to call particular attention to is the fact that in transposing these approximate capacities into their metric equiva-

lents, we find that they do not fit in well with the decimal system of notation. In round numbers these equivalents would be 4 and 16 c.c. As square numbers require considerable thought when used as decimals, the sums resulting from their multiplication are usually inconvenient and awkward, and do not even-up into full round numbers, it will readily appeal to any one, that to use a decimal system to advantage all the factors must, or should, fit into and be well adapted to use in decimal notation. To overcome, as much as possible, any tangible objection or obstacle to the use of, or the ready acquisition of a working knowledge of, the metric system, we have devised a medicine glass that would conform more readily with a decimal system of notation. This medicine tumbler is graduated so as to conform with the approximate equivalent of a teaspoon as recognized in France and other countries that have adopted the metric



A Metric Medicine Glass.

system. In these countries the teaspoon is taken to be the equivalent of 5 c.c., and the tablespoon is taken as the equivalent of 20 c.c., or four teaspoonsful. In this latter particular our tumbler differs from the usually accepted ideas, as the tablespoon is graduated to the equivalent of 15 c.c., or three teaspoons. This we think represents more nearly the approximate relation between a tea and tablespoon of average capacity, and, in addition to this, comes nearer the generally accepted value of capacity for the tablespoon as used in this country at the present time.

This particular medicine tumbler is of the pressed-glass variety, with markings on the inside. The graduations, however, are now etched in, in preference to the moulded graduations that were used at first. These moulded graduations were found to be far from sat-

isfactory, as each succeeding lot of tumblers varied considerably from the supposed capacity. To overcome any possible chance of variation, the manufacturers now engrave the lines on the outside of the tumblers after annealing the glass.

With us in hospital practice the terms tea and tablespoons are gradually becoming obsolete, and doses of liquid medicines are usually referred to as being 5, 10 or 15 c.c., always using the abbreviations for cubic centimetres.

The obvious advantage to be derived from the use of decimal figures will appeal to any one who is not an expert mathematician, or a lightning calculator. By giving 10, 20 or 30 doses of either 5, 10 or 15 c.c., the required multiplication is rapidly and readily accomplished with little possibility of error. In addition to this, by confining himself to full decimal quantities, the physician never has any difficulty in either estimating the number of doses in a bottle of given capacity, or in making up the number of doses he wishes to prescribe.

In conclusion, the writer would like to say that, if any physician or pharmacist will get into the habit of thinking quantities in decimals, he will never have occasion to question the superiority and advantage of the metric system over the heterogeneous and complicated systems of weights and measures now used in this country.

THE CAPACITY OF SPOONS FOR ADMINISTERING MEDICINES.

By C. B. LOWE.

My attention being directed to the capacity of the spoons in common use I have made some investigations of the matter. Remington's "Pharmacy" gives their capacity as follows, viz., "Teaspoonful = ℥i, dessertspoonful = ℥ii, tablespoonful = ℥iv," but afterwards states: "In almost all cases the modern teacups, tablespoons, dessertspoons and teaspoons, after careful tests made by the author, were found to average 25 per cent. greater capacity than the theoretical quantities given." White and Wilcox's "Materia Medica" gives the following list, viz., "A teaspoonful is about a fluid drachm (4 c.c.); usually it is a little more, viz., nearly 5 c.c. A dessertspoonful is about two fluid drachms (8 c.c.). A tablespoonful is about

half a fluid ounce (15 cc.); usually it is almost 20 c.c." I have tested a number of spoons, such as are in common use, filling each with distilled water to its full capacity and then measuring the amount. The following results are given: No. 1 (a small teaspoon) contains 75 m.; No. 2, 85 m.; No. 3, 100 m.; No. 4, 100 m.; No. 5, 110 m.; No. 6, 110 m.; No. 7, 120 m.; No. 8, 120 m.; No. 9, 120 m.; No. 10, 130 m., the average being 107 m. (about 7 c.c.). As Nos. 2 and 3 are each known to be 100 years old, we might infer that there has been an increase in the size of teaspoons, as the rest of them are of much later date. Of the three dessertspoons shown you their capacity is as follows: No. 1 (modern), 3 fluid drachms; No. 2 (80 years old), full 3 fluid drachms; No. 3 (50 years old), scant 4 fluid drachms. The six tablespoons shown you have a capacity as follows: No. 1 (100 years old), 4 fluid drachms; Nos. 2, 3 and 4 (modern), each 5 fluid drachms; No. 5 (60 years old), full $5\frac{1}{2}$ fluid drachms; No. 6 (modern), 6 fluid drachms. When filled with strong alcoholic tinctures, such as Tinct. Cinchona Comp., they contain about 10 per cent. less, owing to the fact that the cohesion between the molecules of alcohol is less than that between the molecules of water. Filled with tinctures made from diluted alcohol, such as Tinct. Digitalis, they contain about 5 per cent. less than they do of water. Filled with syrup, such as Syr. Pruni Virg., the amount is about the same as that of water, but about 10 per cent. adheres to the spoons and cannot be measured. My conclusions are as follows, viz.: In actual practice few persons fill spoons perfectly full with medicinal liquids, but only approximately so, therefore, by the use of the average teaspoon the patient would get about 50 per cent. more than the theoretical quantity. The average dessert and tablespoon would give about 25 per cent. more. As the teaspoon is the measure by which liquid medicines are ordinarily administered, this average increase in size of 50 per cent. becomes a matter of some consequence, especially when maximum doses of active drugs are prescribed. For instance, a physician might think he was giving the $\frac{1}{16}$ of a grain of strychnine, whereas by the ordinary teaspoon the patient would get $\frac{3}{32}$ of a grain, or nearly $\frac{1}{10}$. Or 4 m. of hydrocyanic acid might be prescribed as a dose, but the patient would get 6 m. This disparity between theory and practice is partially recognized by some physicians; one that I am acquainted with always prescribes a $2\frac{1}{2}$ -ounce mixture when he wishes the patient

to get 16 teaspoonfuls; a three-ounce mixture would give him exactly what he wants.

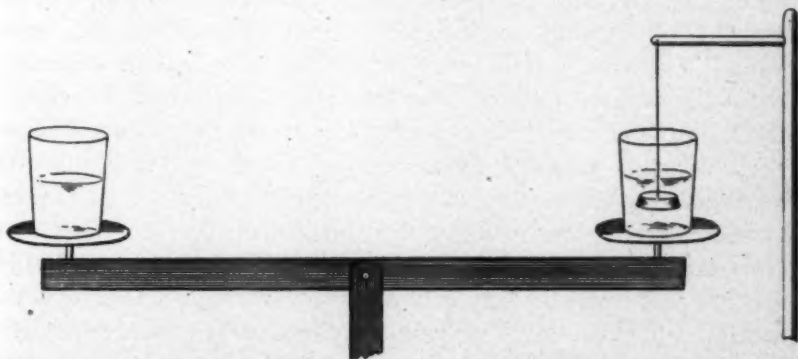
Professor Wilcox's comment upon the domestic measures should be widely circulated. He says: Spoons, glasses, and cups vary so much in capacity that it is never safe to prescribe solutions of powerful drugs to be measured by them. The use of glass graduates, which can be obtained accurately marked, should be insisted upon.

NOTE ON THE DETERMINATION OF SPECIFIC GRAVITY.

BY ROBERT A. HATCHER, M.D.

The accompanying diagram illustrates a method of taking specific gravity which has not been widely used (if, indeed, it has ever been suggested), with an ordinary box prescription scale.

A beaker containing water is balanced upon the scale, and having weighed the article in air, it is then suspended so that it is wholly immersed in the water but does not touch the bottom of the beaker.



Determination of Specific Gravity with a Prescription Scale.

The weight now required to restore the balance is the weight of the water displaced, and it equals the loss of weight of the substance in water. The specific gravity is found by dividing the weight in air by the loss of weight in water, the result being the specific gravity sought.

EDITORIAL.

BIO-CHEMICAL ANALYSES AND THEIR VALUE.

In an editorial in the March number of *Pediatrics* on the "New Diagnosis" occur a number of statements which are rather suggestive and have a wider significance than simply to the modern physician for whom they were written. By the "New Diagnosis" is meant "the recognition of various types of disease by the assistance of the new discoveries in bacteriology, physics and chemistry; many of them rendered practicable by the newer forms of the compound microscope. These discoveries are familiar enough—the tubercle bacillus, the malarial parasite and many more. But the speed with which announcements of scientific achievement have succeeded one another has perhaps blinded a part of the profession to the fact that there is just as much room to-day in the practice of medicine for the educated fingers, eye and ear as there ever was. The new field of work has not replaced the old; on the contrary, both fields remain, both must be examined, both gone over from end to end before a diagnosis can as a rule be considered secure. Diphtheria bacilli in the throat do not prove diphtheria unless the patient has symptoms; the diazo-reaction in the urine, or the Widal test with the blood, must be taken as coördinate evidence along with these spots; the nose-bleed, the splenic tumor, and the fever, before us may certainly say 'typhoid.' The new diagnosis has *complemented* the old in a manner that has proved and will prove infinitely beneficent. But there is no fair ground to hope or even to wish that the chemist and the microscopist shall supersede the alert and well-educated 'all-round' physician. As they say in Germany, 'You can't turn a man into a test-tube.'"

In an editorial in this JOURNAL (February, 1899) on "Germs and Disinfection," attention was directed to the fact that those who understand least of the nature of germs and disinfectants are likely to be most deluded by the subject. It is said that some time ago "a gang of coalers at Hull refused to discharge a cargo of coals until they had been disinfected." While Dr. Koch, when he made his first visit to the Hamburg hospitals, found everything prepared in the most correct style, and on his finishing with the first ward, being invited in the usual manner to wash his hands with the most scientific soaps, disinfectants, etc., he declined, observing, nonchalantly, "There will be plenty of time for that presently."

A worker in making microscopical examinations for physicians observes (*Pediatrics, loc. cit.*) that his patrons may be divided into three classes, of which the largest class are "those who know neither how to prepare their specimens nor what help the microscope can possibly afford them in a troublesome diagnosis. These men send fermenting urine in dirty bottles to be tested for 'typhoid bacilli;' plump and blooming boys to 'have their red cells counted,' patients who have not had a chill or an elevated temperature for months to be examined for 'malaria,' or bits of tough beefsteak passed *per rectum* as probable specimens of 'carcinoma of the colon.' * * * Perhaps these men last named have the ultimate motive of impressing the patient with a notion of their own omniscience; but there is no honest word to be said for such performances except—*quackery.*"

Modern methods of research have thrown a wonderful light on not only diagnosis in medicine, but the valuation of economic products in general. As in medicine, so in these fields: the newer biochemical methods have complemented the old in a manner that is beneficent, and there is no ground for supposing that all five senses with the man of common sense cannot be turned advantageously to account.

In the discussion which followed the reading of a paper on "Spanish Saffron" at the Pennsylvania Pharmaceutical Association (Proc., 1898, p. 109), M. N. Kline said that the English women who used saffron know good saffron when they see it. He said that they know from practical use how to select the best quality, even though no one might be able to assign the reason how they determined this.

It is well known how "many large importers of tea, coffee and cacao employ a taster or tester to determine the grade of the material imported. Long experience enables these men to detect by taste very slight variations in quality. Manifold repetitions of the operation enables them to become familiar with every shade of agreement between the taste of a sample and the appearance, feel and smell of it. In this way all the senses become able to share in the work of determining the quality of the sample, the presence of adulterants, facings, etc. The determination of the kinds of adulterants is largely a matter for chemistry and microscopy. In grading wool, cotton, etc., dealers depend upon the length of staple, amount of dirt, fineness of fibre, strength of fibre, uniformity of the

lot, etc., as revealed to them by their senses of sight and touch. Experience gives them skill to form an approximately correct estimate of the value of a sample, especially of its adaptability to any particular use to which they may wish to put it. It is very much like buying fruit—you look at it, feel it and taste of it, and thus judge of its condition. If it suits your desires, your tastes and your pocket-book, you buy it."¹

There are likewise in drugs certain qualities which are not revealed either by the microscope or the test-tube, but which, nevertheless, are apparent to the physician who employs the drug. An article may be nearly exhausted of its active constituents and yet pass as the genuine so far as the microscope alone will demonstrate. One sample of drug may assay as much as another, and yet not do the work that is intended by the physician. So far as the microscopical and chemical tests are concerned, there must always be limitations in their employment. These can only complement the tests, which have always been employed, and for which no reason can be assigned for the results that they give. They who succeed in putting out good preparations know in more ways than one how to pronounce on the value of a drug, and they see to it that no stone is left unturned (from the growing of the plant yielding the drug till its actual preparation, conservation and employment by the physician) to insure its doing the work intended by the physician. The true analyst is not only a microscopist, a chemist, a biologist, but a tester and taster, one who uses his five senses with an abundance of common sense, backed by a good training. The future has much in store for the specialist who is an all-round man, with all his senses developed, and who tastes and feels and sees as well as uses the microscope and test-tube.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

A TEXT-BOOK OF PHARMACOLOGY.—Including Therapeutics, Materia Medica, Pharmacy, Prescription-writing, Toxicology, etc. By Torald Sollmann, M.D. Royal octavo volume of 880 pages, fully illustrated. Philadelphia and London: W. B. Saunders & Company, 1901. Cloth, \$3.75 net.

¹ Extract from a letter from Wm. B. Marshall, Curator of the Philadelphia Commercial Museum, July 13, 1899.

In this work the author has not only brought together the facts relating to the pharmacological study of drugs, but has also given in Part I a rather comprehensive treatment of the preparation and prescribing of medicines, as well as an outline of toxicologic analysis. The most valuable portions of the work are Parts III and IV, in which are given practical exercises in experiments on animals, frog-work, work on mammals, and method of analyzing the causes of pharmacologic action. While Cushny, in his *Pharmacology*, considers it probable that pharmacy will occupy a still more subordinate position in medical education, Sollmann seems to consider that a knowledge of pharmaceutic methods, and even pharmacognosy, is necessary to the education of the physician. It matters not which view is favored; it would seem that it is a mistake to include so much of these subjects in a work of this character as has been done by Sollmann. The work, while based on the teachings of Schmiedeberg, shows much originality and is a valuable contribution to the text-books on the newer pharmacology, the intimate relation of which to practical medicine is becoming more and more evident as progress in medicine is made. It is works of this character that interest the pharmacist who is likely in the near future to appreciate the pharmacological valuation of animal and vegetable drugs.

MATERIA MEDICA, PHARMACY, PHARMACOLOGY AND THERAPEUTICS. By W. Hale White, M.D., F.R.C.P. Edited by Reynold W. Wilcox, M.A., M.D., LL.D. Fifth American Edition, thoroughly revised. Published by P. Blakiston's Son & Co., 1012 Walnut Street, Philadelphia. 1901. Price, \$3.00 net.

This popular work has been referred to on previous occasions in this JOURNAL. The new edition has been thoroughly revised and twelve pages of new matter added. It is one of the most condensed and most valuable of the works on therapeutics, and is a valuable aid to students and practitioners alike.

THE MEDICAL PLANTS OF THE PHILIPPINES.—By T. H. Pardo de Tavera, Doctor en Medicina de la Facultad de Paris, Comisionado Cientifico de S. M. en las Islas Filipinas y Delagado en las Mismas de la Societe Academique Indo-Chinoise de Francia, Miembro Fundador Correspondiente de la Sociedad Espanola de Higiene, etc. Translated and revised by Jerome B. Thomas, Jr., A.B., M.D. Published by P. Blakiston's Son & Co., 1012 Walnut Street, Philadelphia. 1901. Price, \$2.00 net.

This work was written with the special object of facilitating the study of the native medicinal plants by the numerous medical officers stationed at small posts throughout the Philippines. The author has given the common names, botanical origin, botanical description, habitat, constituents and uses of the drugs considered in the book. A very large number of the plants enumerated are employed in medicine throughout the civilized world. A number of the other plants have been known to be used in India, the East Indies, and other tropical countries. The plants mentioned, which are peculiarly indigenous to the Philippines and which may prove of value in medicine, are relatively few, if any. The work, at any rate, may form the basis for subsequent work, and it is not unlikely that some important and valuable medicinal plants may be established in these comparatively unexplored and interesting islands.

DIE MIKROSKOPISCHE ANALYZE DER DROGENPULVER. Von Dr. Ludwig Koch. Zweiter Band. 1te Lieferung. Die Rhizome, Knollen und Wurzeln. Leipzig: Verlag von Gebrüder Borntraeger, 1901. Subscriptionspreis, 3 mk. 50 pf.

In this first part of the second volume are considered the anatomical elements of the rhizomes and their characteristics in the study of this class of drugs; also the microscopical characteristics of calamus, aspidium, galangal, hydrastis and iris. The present part merits the same commendation that the previous parts that have been issued have received in this JOURNAL.

DIE ROHSTOFFE DES PFLANZENREICHES. Versuch einer technischen Rohstofflehre des Pflanzenreiches. Von Dr. Julius Wiesner. 2te gänzlich umgearbeitete, und erweiterte Auflage. 6. Lieferung (Bd. II, Bogen 1-10), mit Textfigur 1-44. Leipzig: Verlag von Wilhelm Engelmann, 1901.

This valuable work, in the revision of which a dozen authors are engaged, has reached the 6th Lieferung, which is devoted to the consideration of the useful woods. The treatment of the subject is as follows: (1) Die Gliederung des Holzkörpers; (2) Der innere Bau der Hölzer; (3) Die äussere Structur der Hölzer; (4) Physikalische Eigenschaften der Hölzer; (5) Chemische Charakteristik des Holzes und der andern fibrösen Pflanzengewebe; (6) Uebersicht der wichtigeren Pflanzen, deren Holz technisch benutzt wird; (7) Specielle Betrachtung der wichtigsten Nutzhölzer; (8) Uebersicht

der hier beschriebenen Hölzer von Nadelbäumen nach mikroskopischen Merkmalen.

The woods yielded by the different species in 112 families are considered; the important references being given in connection with each of the species considered. The work is indispensable to those interested in technical products.

DAS KOMPRIMIREN VON ARZNEITABLETTEN. Von F. Utz. Mit in den Text gedruckten Figuren. Berlin: Verlag von Julius Springer, 1901. M. 2.40.

This valuable little book on the making of tablets is well illustrated and full of practical information on the construction of the different machines and the formulæ found useful in the making of tablets. It consists of the following parts: (1) Geschichtliches; (2) Komprimiermaschinen; (3) Nebenapparate; (4) Das Vorbereiten der Arzneimitteln zum Komprimieren; (5) Allgemeine Vorschriften für Behandlung der Maschinen u. s. w.; (6) Das Komprimieren der Tabletten; (7) Die Bezeichnung der Tabletten; (8) Die Verpackung der Tabletten; (9) Die Aufbewahrung der Tabletten; (10) Verordnungen.

NATIONAL ASSOCIATION OF RETAIL DRUGGISTS.

The following are the officers of the Association for the year 1901-1902: President, James W. Seeley, Detroit, Mich.; First Vice-President, R. K. Smither, Buffalo, N. Y.; Second Vice-President, Thomas Voegeli, Minneapolis, Minn.; Third Vice-President, B. E. Pritchard, Pittsburg, Pa.; Secretary, Thomas V. Wooten, Chicago, Ill.; Treasurer, Rudolph S. Vitt, St. Louis, Mo.

The members of the Executive Committee are as follows: Simon N. Jones, Louisville, Ky., Chairman; James W. Seeley, Detroit, Mich.; F. E. Holliday, Topeka, Kan.; John C. Gallagher, Jersey City, N. J.; W. E. Bingham, Tuscaloosa, Ala.; F. W. Meisner, La Porte, Ind.; Charles Fleischner, New Haven, Conn.

The following are the resolutions adopted by the Association at its recent convention at Buffalo in conformity with the recommendation of the Committee on Resolutions:

Resolved, That we commend the forceful and able address of President Anderson and recommend that the thanks of the Association be tendered him for the discharge of the duties of his office

and the valuable recommendations contained therein, which recommendations have been voted upon in the different resolutions that follow :

Resolution "A." Organization.

Resolved, That the Secretary of the N.A.R.D. is instructed to proceed with the work of local organization throughout the country, subject to the sanction and approval of the Executive Committee, as rapidly as the condition of the finances of the Association and the training of competent organizers will justify.

That the Secretary is authorized, with the approval of the Executive Committee, to employ such organizers as the territory to be organized may seem to require.

That inasmuch as the formation of local associations and the adoption of schedules is calculated to bring immediate financial benefit to the members of such associations, it is directed that organization should be as nearly self-sustaining as possible, and the Secretary is authorized, with the approval of the Executive Committee, to provide for the collection from the members of such new associations of an organization fee, in addition to the annual dues to the N.A.R.D., of such amount as may be essential to meet, approximately, the cost of organizing the territory as thoroughly as it can be organized, and the Secretary shall issue to all organizations that may be formed a certificate of membership to each of its members, which certificate shall also show the affiliation of the association with the N.A.R.D.

That the organizers shall secure the adoption of a uniform schedule of prices by all organizations formed wherever practicable.

That all organization work conducted in a State in which the State pharmaceutical association is affiliated with this body shall be done with the advice, knowledge and co-operation of the State association.

Resolution "B." Reduction of Prices on Proprietaries.

Resolved, That inasmuch as the N.A.R.D. has been largely instrumental in securing the repeal of the stamp act on proprietary medicines, the Association feels strongly its right to expect that manufacturers who have advanced their prices to the retail trade to cover the cost of this tax should now reduce their prices to conform to those in existence prior to the imposition of the tax.

That we commend the action of those proprietors who did not

advance their prices on account of the imposition of the war revenue tax.

That we commend the action of the proprietors who promptly reduced their prices when the tax was repealed.

That the Secretary is instructed to prepare a list of all proprietors who advanced their prices and have not reduced them since the repeal of the tax. The Executive Committee shall consider any special reasons given by each of those manufacturers who have not reduced their prices, accompanied in each case by the recommendation of the Executive Committee with reference thereto.

Resolution "C." Non-Tripartite Goods.

Resolved, That while the tripartite plan is intended to control the sale of proprietary goods only, the Association desires to again commend the action of those manufacturers of pharmaceuticals and other products who have uniformly recognized the principles of the plan.

That we renew our recommendation that the goods of such manufacturers are entitled to preferential consideration at the hands of the drug trade.

That this recommendation be brought to the attention of every association in membership by the Secretary of the National Association.

Resolution "D." The N.A.R.D. Plan.

Resolved, That the results of the causes and plans of the N.A.R.D. during the past year for the betterment of drug-trade conditions is a practical demonstration of the benefits of organized effort and furnishes gratifying encouragement for the continuation of those policies and plans.

That we urge upon all manufacturers of goods sold to the drug trade and all jobbers the advantages to be gained from a loyal and vigorous maintenance of the plans jointly adopted.

That local associations not now reaping the benefits of the tripartite plan are urged to renew their efforts at organization upon such lines as will offer most satisfactory results, calling upon the Secretary and the Executive Committee for such assistance as they may deem necessary to success.

That in the enforcement of the tripartite plan all names intended to be listed as aggressive cutters be submitted to the Executive Committee; the Secretary shall duly list the names and notify the necessary persons.

Resolution "E." Change in Basis of Representation, etc.

The committee recommends that Article III on Membership be amended by the substitution of the following section for Section 2 :

"Section 2. Each State and local association shall be entitled to one delegate for each fifty active members or fraction of fifty members. Such delegates shall be actively engaged in the retail drug business."

The only effect of the amendment above recommended is to change the basis of representation from one hundred members to fifty members, which, under a form of local organization throughout the country, would equalize the representation between the city districts more nearly than under the present basis.

We recommend that the fourth by-law be amended to read as follows :

"Fourth. The fiscal year shall be identical with the calendar year, and the dues of the affiliated associations shall be payable at the beginning of the fiscal year. The collection of the dues is placed in the hands of the Executive Committee, and the committee shall have power to drop from the membership-roll any association which has not paid its dues for any preceding fiscal year."

Resolution "F." National Legislation.

Resolved, That we commend the efforts of the Committee of National Legislation in securing the repeal of the stamp tax on medicinal preparations, and express appreciation for the assistance rendered by members of the National Wholesale Druggists' Association, the Proprietary Association of America, and any other persons in accomplishing the repeal.

Resolution "G." Trademarks and Patents.

Resolved, That in accordance with the suggestion of the Committee on Trademarks and Patents regarding pharmaceutical products, we reaffirm our declaration that it is an indispensable principle of justice that the Government should not grant a patent on the product itself, but should confine such patent protection to the process of manufacture. To patent the products is to create monopoly and retard progress in the healing arts.

That the Committee on Trademarks and Patents, in conjunction with the Committee on National Legislation, is instructed to prepare and distribute to the organizations in membership, through the office of the N.A.R.D., a memorial urging upon Congress favorable action on this subject.

That in the preparation of such memorial the said committee is requested to embody the suggestions contained in the proposed "Act Amending the Patent Laws of the United States" contained in the report of the Committee on National Legislation.

That all associations in membership and all retail druggists are urged to promote such favorable action by Congress at the earliest date practicable.

Resolution "H." Government Competition.

Resolved, That in accordance with the recommendations of the Committee on National Legislation concerning the manufacture of vaccine and biologic products, the Association recommends that the bodies affiliated with the N.A.R.D. use their efforts with their respective Congressmen to secure the discontinuance by the Government of the manufacture of these products in competition with private enterprise.

Resolution "I." Finances.

Resolved, That if it becomes necessary, in order to promote most actively the work of the Association, the Executive Committee may instruct the Secretary to ask for contributions from the associations in membership of such amount as they may feel inclined to make.

PHARMACEUTICAL MEETING.

The second of the series of pharmaceutical meetings of the Philadelphia College of Pharmacy for 1901-1902, was held Tuesday, November 19, 1901. Mr. William McIntyre, a well-known pharmacist of this city, presided.

The first speaker was Mr. Henry P. Hynson, Baltimore, who has contributed much during the past few years to the organization of the new section in Practical Pharmacy and Dispensing of the American Pharmaceutical Association. Mr. Hynson's paper was on "Modern Evidences of Pharmaceutical Progress and their Value" (see page 575). At the conclusion of the reading of the paper, the chairman stated that it gave those who were present an equal opportunity of returning their experience on this subject and invited a discussion, which proved very interesting indeed. In discussing the subject of the deterioration of drugs by vermin, Mr. Boring stated that he had found the use of chloroform to be very successful as a preventive. Mr. Campbell said regarding the sug-

gestion of Mr. Hynson on the employment of absorbent surgical gauze for wiping off capsules and using it generally in place of sawdust or paper for wiping ointment slabs, etc., that he had used absorbent cotton for the same purpose and thought it more advantageous. Mr. Boring, on the other hand, considered it better to use sawdust, and commended that portion of Mr. Hynson's paper concerning shelf-bottles, in which he said that "a good modern rule is to have only so many as will add to your convenience and none for show."

Mr. Gordon brought up the matter of preventing the stoppers of bottles containing syrups, solutions of alkalies, etc., from sticking, and stated that he found it advantageous to use mixtures of petrolatum with either wax, rosin or paraffin on the stoppers, and that he found the rosin and paraffin mixtures better for syrup bottles. Mr. Boring said that the late Dr. Squibb's idea of using a little petrolatum was all that was necessary to keep stoppers from sticking, and for syrups, thought the use of loose stoppers the best.

Professor Remington did not entirely favor the abandonment of cutting paper in required sizes for wrapping pill and ointment boxes, and thought it well to have separate shelves for this purpose, as well as the cylindrical roll favorably commented upon by Mr. Boring, Mr. Hynson and others. Mr. Hynson furthermore stated that he uses a box or carton wherever practicable, and that the great advantage from the use of cylindrical rolls was, that there was no waste. Dr. Lowe stated that he had been using for some time the "utility box" for epsom salts, borax and other substances, and found it very satisfactory. Mr. Campbell, who has a suburban store and a number of customers who drive up to the store, said that he facilitated matters by having a call-button attached to the hitching post for the use of these customers. In concluding the paper which had been put in this practical and interesting form for the benefit of the pharmacists present, Mr. Hynson commended the paper of Mr. Mason (see this JOURNAL, p. 508) on "A New Economic Order in Pharmacy" and urged the younger men in attendance at the meeting not to start new stores, but combine several stores, as this was more satisfactory to the greatest number.

The next paper was on "Sponges" (see page 584), by Mr. Albert Hart. This was read by Mr. Wm. L. Cliffe. In the paper were described the sponges as they grow in the sea, the method by which

obtained, and their uses. The paper was illustrated by a series of specimens of sponges exhibited by the Smith, Kline & French Co., and included an old earthen jug upon which a large Mandruka sponge of fine quality had grown. A Zimocha toilet sponge and two fine specimens of silk surgeon cup sponges, all of which had become attached naturally to rocks; a peculiar specimen was a genuine large Abaco velvet sponge of perfect form, attached to a coral formation of peculiar shape, one part looking very similar to a pineapple; a set of four pictures showing "a diver being dressed to descend," "a diver preparing to descend," "a diver surrounded by curious fish," and "a typical view where sponges abound;" also a large tortoise, nearly 3 feet long, its shell having been polished, and a sample of every known variety of sponge used commercially (the most interesting of these being a perfectly formed Mandruka bath sponge measuring about 18 inches across), added interest to this interesting paper.

In answer to a question by Dr. Lowe, concerning the possibility of cultivating sponges successfully on the coral reefs of Florida, Mr. Hart took an adverse view and stated that, while experiments on a small scale had proven successful, the conditions for their development to produce a large crop were not practically attainable. They must be planted in clear water, water in which there is scarcely any motion, and at a depth of about 16 feet. He also stated that there were about \$300,000 worth of sponges shipped from Florida annually, and that in the Mediterranean waters many of the beds had practically given out. In reply to a question by Mr. Hynson, he said that a certain variety of sponge is peculiar to a particular locality, and the clearer the water and the warmer the temperature the finer the quality of sponge. Mr. Hart also accorded with the view of Dr. Lowe that the Red sea was a favorable locality for the growth of sponges, and stated that some were obtained from this locality. The matter of the adulteration of sponges was also discussed. Professor Remington referred to the method of loading *bales* of sponges by the use of a mixture of barytes and red lead. Mr. Hart stated that at the present time they were washed in water with much sand, and that the sand dries in and the water dries out of the sponge, thus increasing the weight. In place of sand, salt and sugar solutions also were used.

M. I. Wilbert read a paper on "A Metric Measuring Glass" (see

p. 590). In this connection Professor Lowe read a paper on "The Capacity of Spoons Used for Administering Medicine" (see p. 593). In discussing these papers Mr. Peter P. Fox said that he recommends patients to use the old-fashioned teaspoon in preference to the modern teaspoon. Mr. Boring thought it important for the patient to purchase a medicine glass. Professor Remington said that he used to have his name on the medicine glass and give it away with the medicine. He also stated that his own experiments on the capacity of teaspoons, etc., alluded to by Dr. Lowe, were made with plated and tin teaspoons, and he suggested that Dr. Lowe continue his investigations with these. In reply to the question of the accuracy of the medicine glass, Professor Remington said that he had never found them to be inaccurate. As illustrating the importance of this subject, Dr. Weidemann brought to the attention of the meeting the fact that a physician had ordered a four-ounce mixture for a patient which was to be taken in teaspoonful doses every hour, and that in sixteen hours the prescription was brought back for renewal. Mr. Henry C. Blair, Jr., subsequently stated that a patient had recently complained to his clerk that a mixture did not contain the number of doses (or teaspoonfuls) that the doctor had said it would.

Mr. F. T. Gordon exhibited a collection of fifty-six of the metals arranged in a case, from E. Merck & Co. Among the specimens were a number of the rarer metals: rubidium, caesium, thorium, yttrium, Indium, tantalum, zirconium, etc., the whole forming a very interesting exhibit. The peculiarity of both gold and silver in mass and in powder was very striking. Gold in powder is an orange to brick-red, silver is pure white. Specimens of boron, silicon, selenium and tellurium were also included. It was remarked that if each of the tiny bottles containing these rare metals held an amount equal in weight to the specimens of copper or zinc shown, that the case would be worth perhaps over \$10,000 which, as exhibited, was valued at \$50.

Wm. R. Warner & Co. exhibited some elixirs. Among their products noted was elixir salicylic compound, after the firm's original formula, a remedial agent in rheumatism and kindred diseases; also *tono sumbul* compound, an elegant pharmaceutical product both in appearance and taste, possessed of valuable tonic properties.

A vote of thanks was tendered Messrs. Hynson and Hart for their valuable and interesting communications.

Before adjourning the secretary announced that the following provisional program had been arranged for the next meeting, on December 17th:

"The Origin, History and Influence of State Pharmaceutical Associations." By Joseph L. Lemberger, Ph.M.

"The Pharmacologic Assay of Drugs." By Dr. Arthur R. Cushny, University of Michigan.

"A Useful Method of Filling Capsules with Essential Oils." By William G. Toplis.

Various exhibits and some other papers are also expected.

H. K.

NOTES AND NEWS.

U. S. PHARMACOPŒIA.—By reason of the death of Dr. Charles Rice several changes have been made in the Committee of Revision, as follows: Chairman, Joseph P. Remington; First Vice-Chairman, C. Lewis Diehl; new member, Henry H. Rusby. The death of William S. Thompson, the Chairman of the Board of Trustees, has also necessitated some changes, as follows: Chairman, Charles E. Dohme; new member, J. H. Beal.

AMERICAN PHARMACEUTICAL ASSOCIATION.—Owing to the death of William S. Thompson, Chairman of the Council, Prof. A. B. Prescott has been elected Chairman, and Charles E. Dohme, Vice-Chairman.

CONFERENCE OF TEACHING FACULTIES.—At the recent meeting, held conjointly with the St. Louis meeting of the American Pharmaceutical Association, the principal business transacted was to complete an organization. A constitution and by-laws were adopted. The following officers were elected: President Joseph P. Remington; Vice-President, Edward Kremers; Secretary and Treasurer, Wilbur L. Scoville. Executive Board, J. H. Beal, Chairman; Oscar Oldberg, William Simon, L. E. Sayre, E. A. Ruddiman.

CONFERENCE OF BOARDS OF PHARMACY.—At the St. Louis meeting of the American Pharmaceutical Association provision was made for a meeting of the Boards of Pharmacy. W. M. Searby was elected Temporary Chairman and A. Brandenberger, Temporary Secretary. Ten States were represented. It was decided that a committee be appointed, to consist of the Chairman and Secretary, to draw up resolutions requesting the Committee of Arrangements for the next meeting of the American Pharmaceutical Association to provide a space on their program for a conference of boards of pharmacy. It was also decided to appoint a committee, consisting of the Chairman, Secretary, and three members, to draw up a constitution and by-laws as soon as possible, and mail a copy of them to the Secretary of each State Board of Pharmacy, with the request that each board send a representative to the next annual meeting, to be held at Philadelphia. There was also a committee appointed to ascertain from the several boards of pharmacy the qualifications, percentage, etc., required of candidates for examination before certificates were granted.

THE NEW YORKER DEUTSCHER APOTHEKER VEREIN celebrated their fiftieth anniversary on October 1 with a large banquet. "Founded half a century ago by a few German druggists of New York, who met for the promotion of good fellowship and the advancement of pharmaceutical knowledge, the Association has become one of the most influential pharmaceutical organizations in the city."

STATE AID IN EDUCATIONAL WORK.—J. M. Cattell (*Science*, 1901, p. 575), in discussing the Washington Memorial Institution and a National University, says: "We shall not always depend on the charity of the rich, nor will our universities always be administered by business men. Pennsylvania, Johns Hopkins, and Cornell are turning to the State for help; Harvard, Yale, and Columbia must do the same if their prestige is to be maintained."

THE METRIC SYSTEM.—In a report to the British Association of Chambers of Commerce the following resolutions were adopted: "(1) That, after considering various suggestions, this committee is unanimously of the opinion that the chambers should unite in urging upon the Government the compulsory adoption of the metrical system of weights and measures, leaving matters of detail to be considered later; (2) That the Committee is unanimously of opinion that a British decimal system of coinage must be on the basis of retaining the sovereign, with the florin as a unit, divided into a hundred cents or farthings; (3) The Committee recommends that there should be metal coins of five and ten cents, and bronze coins of one, two and four cents or farthings."

THE HANBURY MEDAL was presented to Dr. George Watt, widely known as the author of "The Economic Products of India," on October 1st by the President of the Pharmaceutical Society of Great Britain.

RUDOLF VIRCHOW's eightieth birthday (October 12th) was celebrated in Berlin with appropriate ceremonies. The Virchow research fund was increased by 50,000 marks; a new hospital containing 1,700 beds has been named in his honor; and the Emperor has conferred an order and a medal. In New York city there was also a banquet in honor of Virchow given on October 12th.

HORATIO C. WOOD has been granted leave of absence for a year from the University of Pennsylvania, and H. C. Wood, Jr., delivers the lectures upon the physiological action of drugs.

H. H. RUSBY delivered a lecture on "Production of Cinchona Bark and Quinine in the East Indies," at the New York Botanical Gardens, on November 9th.

JOHN URI LLOYD has written a new story "Warwick of the Knobs," a story of a strange people and a curious form of life in Stringtown County, Ky. Etidorhpa has also been recently published in popular form, several chapters, which were omitted when it was first printed, having been restored.

HANNAH E. LONGSHORE, the first woman to practice medicine in Philadelphia, died October 15th. It is said that the sneers, ridicule and obstacles she encountered at that time might have driven any one less reliant from the field. Male physicians refused to consult with her because she was a woman, and

druggists refused to fill her prescriptions. It is said that teachers in the public schools instructed their pupils not to walk on the streets with Miss Longshore, "because her mother was a woman doctor." To meet the opposition, Mrs. Longshore carried her own medicines. Conscious merit kept her steadfast, and she at last began to reap her reward. By the end of her third year her practice had increased to such an extent that she was compelled to give up her lectures to women, which had met with such success, and resign her position in the Woman's Medical College. She made such a success during forty years of activity that she retired with a modest fortune, and it was said that her practice was larger, with one exception, than that of any other woman physician in the United States.

SUSAN HAYHURST'S twenty-fifth anniversary as pharmacist of the Woman's Hospital, Philadelphia, was celebrated by a reception given by the Board of Managers on October 1st, at the hospital. Dr. Hayhurst has probably done more for young women in pharmacy than any one else, as she not only regularly employs women assistants, but many come to her to gain a practical knowledge of pharmacy.

CHARLES W. PARSONS, identified for nearly twenty-five years with pharmaceutical education and journalism, is now President of the American Correspondence University. The value of home study as of university extension work is becoming more appreciated by educators as being the entering wedge to collegiate and university work by those who for various reasons are not attendants at our colleges. The course in pharmacy as conducted by Mr. Parsons in the American Correspondence University is no doubt a systematic course of such a character that will benefit pharmacists who have not had the advantages of a college education. The course, it should be stated, is not intended to take the place of a college education.

PRESIDENT WILLIAM MCKINLEY.—The official report on the case of President McKinley has been published in a number of medical journals. Whatever may be said of the case in the light of modern progress in medicine, the lamentable fact was that the doctors in attendance allowed the nation to believe for some days that he would recover. The result was that the shock of his final collapse and death was as great as the first news of the assassin's dastardly crime.

VON MUELLER NATIONAL MEMORIAL FUND.—The Executive Committee to consider the best form for the memorial to take, recommended to the subscribers that the money available be devoted to the institution of a medal and a prize, to be awarded at intervals of not less than two years, to the author of the most important contribution to natural knowledge published within the British dominions, not more than five nor less than one year prior to the date of the award.

SOME DOCTORS OF THE OLDEN TIME.—In a valuable paper, read before the Lebanon County Historical Society, J. H. Redsecker has given some brief and interesting sketches of some of the old doctors of Lebanon, Pa. It is very desirable that the history of the earlier medicine and pharmacy be written, as it will be both interesting and valuable to students in the years to come.

A NUMBER OF BOOK-PLATES, designed by various persons, have been separately printed by the Pharmaceutical Review Publishing Co., Milwaukee. These plates are interesting and valuable to designers, authors, and others.

POPULAR GERMAN NAMES of domestic drugs and medicines, compiled by Fr. Hoffmann, has been revised and enlarged and may be obtained of the Pharmaceutical Review Publishing Co., Milwaukee.

THE THEORY OF ELECTROLYTIC DISSOCIATION, as viewed in the light of facts recently ascertained, is considered by L. Kahlenberg, with the co-operation of A. A. Koch and R. D. Hall, in Bulletin of the University of Wisconsin, No. 47.

FEEDING OF INFANTS AT PUBLIC EXPENSE.—While it is universally recognized that improper and deficient feeding is the principal cause of infant mortality, and it is conceded that the ideal and universal infant food has not yet been devised, it is, however, a matter of common knowledge that the greatest sufferers from inadequate and improper food are the children of the poor. "A project has recently been mooted in England, which, if carried out, might go far to effect the solution. The proposal alluded to is that children of the poor should be fed at the public expense. *The Hospital*, referring to the matter, suggests that some of the money that is so lavishly spent on education, might, with advantage, be devoted to the feeding of infants, and asks whether it would not be better to spend public money for a short time during infancy in securing that they shall grow up strong and straight and fit to earn a living, rather than to spend money in their support during these long years in after life, when, in consequence of their imperfect development, they have become inmates of workhouses, reformatories, and jails. The scheme reads utopian and visionary, but although perhaps at present impracticable, it yet contains the germs of sense. Any plan that will tend to improve the stamina of the human race and to stay the present fearful infantile mortality is at least worthy of attention."

A STRANGE CAUSE OF FIRE.—Fire may be caused by a bottle of water standing harmlessly on a table. A correspondent writes, showing how this may be the case:

"In my laboratory, the other day, I detected the odor of burning wood, and, seeking the cause, noticed a tiny wreath of smoke rising from the counter. Setting aside a flask of water that stood close by, I sponged over the burning spot with a damp cloth. Shortly after I again detected the odor of burning wood, when, to my surprise, I discovered another burning spot on the table close to the water flask. The flask was standing in the sunlight, thereby concentrating the rays to a focus on the top of the table, acting in this case as a burning glass. A handful of highly combustible material was thrown over the burning spot, catching fire almost immediately. I cite this instance merely as a warning to chemists and apothecaries who may not realize how easily a fire may be started in their storerooms by the sun shining through bottles, flasks, and carboys of liquid, converting them for the time being into burning glasses of great power. I have in mind now the instance of a fire originating in a storeroom from this cause."

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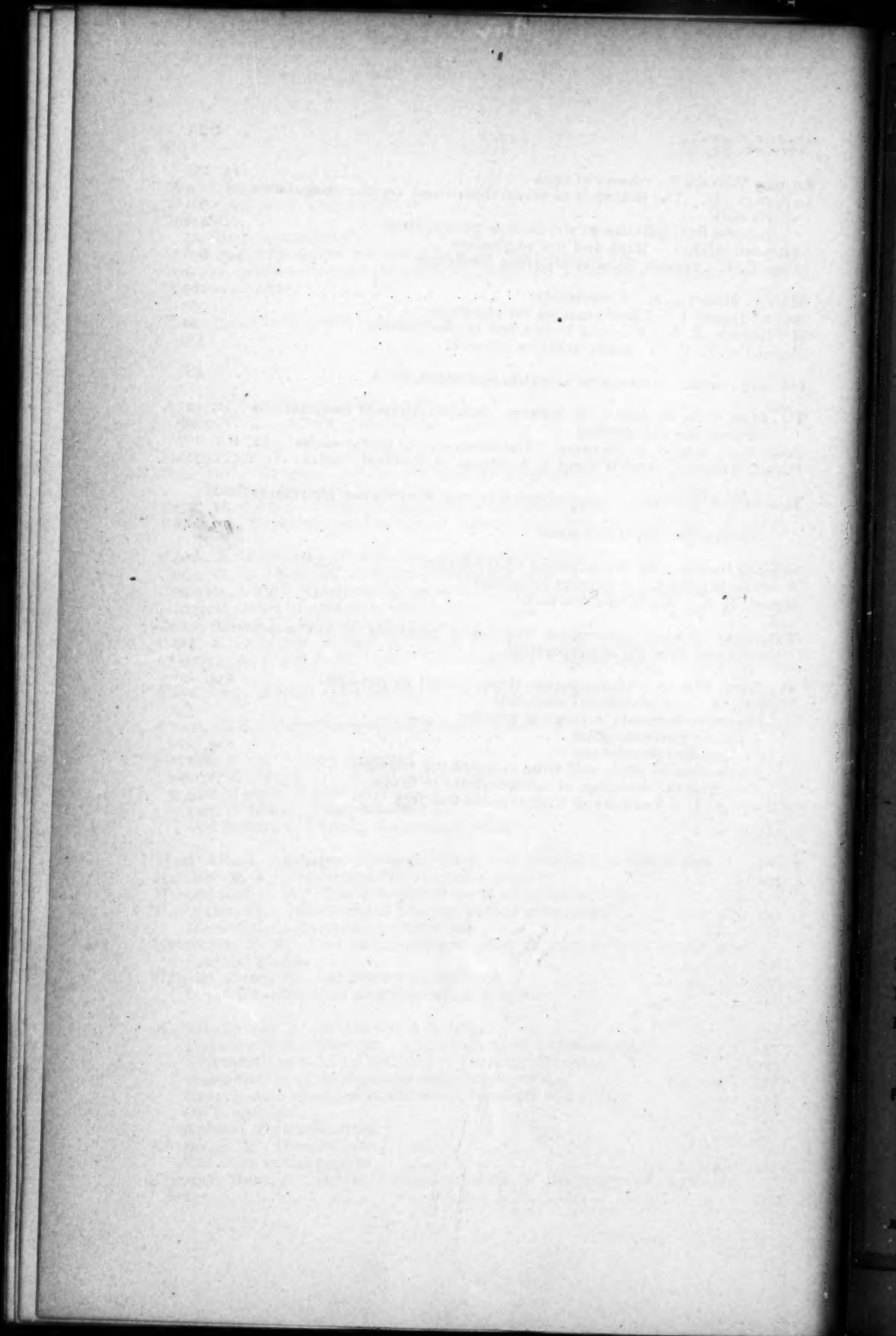
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AMERICAN
JOURNAL OF PHARMACY.

PUBLISHED BY AUTHORITY OF THE

PHILADELPHIA COLLEGE OF PHARMACY.

HENRY KRAEMER, Ph.D., Editor.

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VOL. 73. DECEMBER, 1901. No. 12

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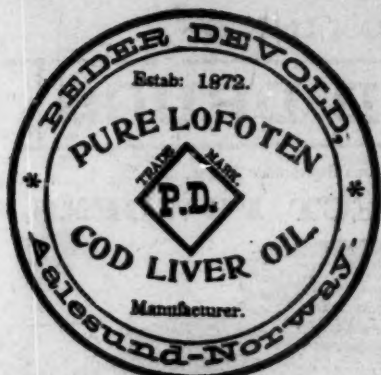
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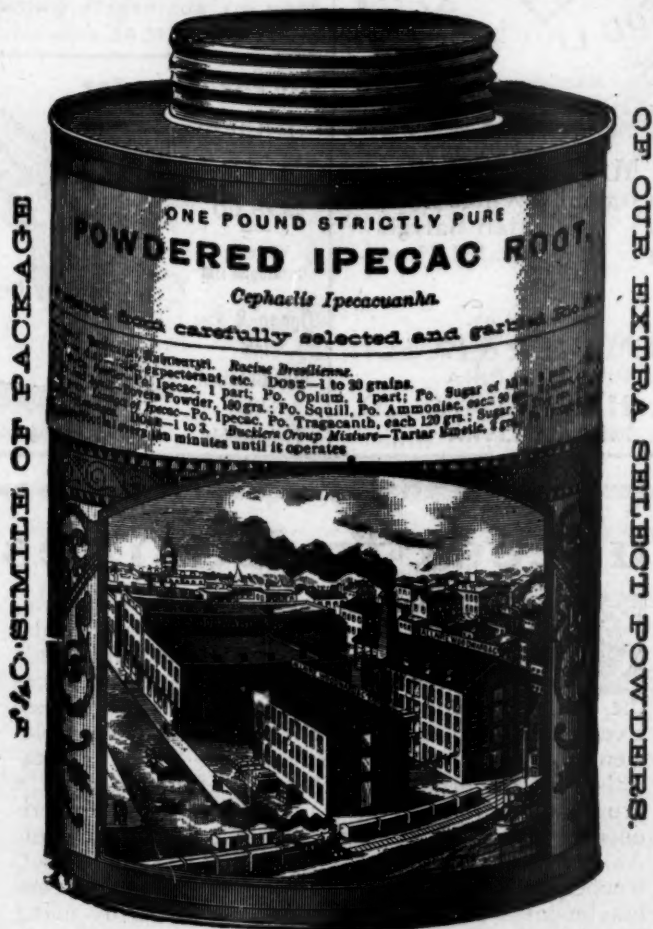
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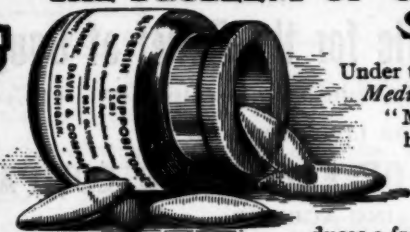
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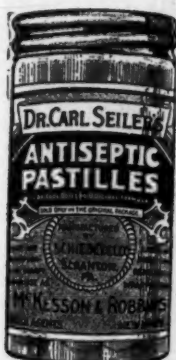
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